

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Canceled)
2. (Currently Amended) The article of manufacture of claim 4 3 wherein said cemented carbide body further comprises at least one carbide of a metal of Groups IVA, VA, or VIA.
3. (Currently Amended) ~~The~~ A hard, wear resistant article of manufacture ~~of claim 4~~ comprising a cemented carbide substrate, substantially free of eta-phase, comprising tungsten carbide and 2-30 weight % binder selected from the group consisting of Co, Ni, Fe, and combinations thereof, wherein binder concentration increases from approximately zero at a surface of the substrate to nominal at a selected distance interior to the surface and does not exceed nominal, wherein the selected distance interior to the surface ranges from 25 to 500 microns.
4. (Currently Amended) The article of manufacture of claim 4 3 wherein said binder is at least 3 weight % cobalt.
5. (Currently Amended) The article of manufacture of claim 4 3 wherein said article has porosity of less than 0.5 volume %.

6. (Currently Amended) The article of manufacture of claim 4 3 wherein binder concentration increases according to a gradient of substantially constant slope extending from the surface to the interior of the substrate.

7. (Canceled)

8. (Currently Amended) The article of manufacture of claim 7 9 wherein binder concentration decreases according to a gradient of substantially constant slope ~~extending from nominal concentrations at a selected distance into the interior of the part to said substrate surface.~~

9. (Currently Amended) ~~The~~ An article of manufacture ~~of claim 7~~ comprising an eta-phase-free cemented carbide body, composed of well-defined metal carbide grains and a binder wherein a binder concentration varies within the article according to a binder concentration gradient decreasing from nominal concentrations at a selected distance interior of a surface of the article to less than 1 wt.% at the surface of the article, wherein the selected distance interior to the surface ranges from 25 to 500 microns.

Claims 10-16 (Canceled)

17. (New) The article of manufacture of claim 3 wherein the selected distance interior to the surface ranges from 100 to 250 microns.

18. (New) The article of manufacture of claim 3 wherein the nominal binder concentration is 3 to 20 wt.%.

19. (New) The article of manufacture of claim 18 wherein the nominal binder concentration is 5 to 12 wt.%.

20. (New) The article of manufacture of claim 3 wherein the binder consists essentially of Co, the nominal binder concentration is 6 wt.%, and the selected distance interior of a surface of the article ranges from 100 to 250 microns.

21. (New) The article of manufacture of claim 20 wherein the binder concentration is a minimum at 5 to 10 microns below the surface of the substrate.

22. (New) The article of manufacture of claim 3 wherein the binder consists essentially of Co, the nominal binder concentration is 6 wt.%, and the selected distance interior of a surface of the article is 400 microns.

23. (New) The article of manufacture of claim 22 wherein the binder concentration is a minimum at 5 to 10 microns below the surface of the substrate.

24. (New) The article of manufacture of claim 3 wherein the binder concentration is a minimum in a near surface region of substrate.

25. (New) The article of manufacture of claim 24 wherein the near surface region is at 5 to 10 microns below the surface of the substrate.

26. (New) The article of manufacture of claim 3 wherein the binder comprises at least 50 wt.% Co.

27. (New) The article of manufacture of claim 9 wherein the metal carbide grains comprise tungsten carbide.

28. (New) The article of manufacture of claim 9 wherein the metal carbide grains consist essentially of tungsten carbide

29. (New) The article of manufacture of claim 9 wherein the binder comprises one or more of Co, Ni, Fe, and combinations thereof.

30. (New) The article of manufacture of claim 29 wherein the binder comprises at least 50 wt.% Co.

31. (New) The article of manufacture of claim 9 wherein the binder consists essentially of Co.

32. (New) The article of manufacture of claim 9 wherein the binder concentration is a minimum in a near surface region of article.

33. (New) The article of manufacture of claim 32 wherein the near surface region is at 5 to 10 microns below the surface of the article.

34. (New) The article of manufacture of claim 9 wherein the selected distance interior to the surface ranges from 100 to 250 microns.

35. (New) The article of manufacture of claim 9 wherein the nominal binder concentration is 3 to 20 wt.%.

36. (New) The article of manufacture of claim 35 wherein the nominal binder concentration is 5 to 12 wt.%

37. (New) The article of manufacture of claim 9 the binder consists essentially of Co, the nominal binder concentration is 6 wt.%, and the selected distance interior of the surface of the article ranges from 100 to 400 microns.

38. (New) The article of manufacture of claim 37 wherein the binder concentration is a minimum at 5 to 10 microns below the surface of the article.

39. (New) The article of manufacture of claim 37 wherein the selected distance interior of the surface of the article ranges from 100 to 250 microns.

40. (New) The article of manufacture of claim 9 wherein said article has porosity of less than 0.5 volume %.